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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,065	01/12/2001	Appadurai Thangaraj	4355D (DIV)	3120

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EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/760,065	THANGARAJ ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *63* is/are allowed.

6)☒ Claim(s) *1-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 25, 2006 has been entered.

Claim 63 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest a device comprising a composition having at least one metal chlorite and at least one acid forming component, wherein the acid forming component is selected from the group consisting of synthetic molecular sieves, acid ion exchange resins, acid treated clays and acid treated calcined clays.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43, 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no sufficient support in the instant specification for the limitation of "uncoated metal chlorite". Applicants have pointed out that support for such limitation can be found in the Examples, however, in these Examples, the technical grade metal chlorite is mixed with the acid forming component, however, there is no support for "uncoated". It should be noted that silence not alone equivalent to a disclosure in the specification for a negative limitation, Ex Parte Grasseli 231 USPQ 393, In re Langdon, 77 F.2d 920, 25 USPQ 415. It should also be noted that there is no clear evidence on record to show that "technical grade chlorite" would inherently be "uncoated". Furthermore, the "uncoated metal chlorite", as now claimed, would include other grades of uncoated metal chlorite beside the disclosed technical grade.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 26-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 581 550 in view of either CN 1,104,610 or CA 959,238.

EP '550 discloses a solid composition capable of releasing chlorine dioxide upon dissolution in water, said composition comprising:

a. a water soluble chlorite salt

b. an oxidizing chlorine-releasing agent, in the form of one or more sodium- and/or potassium-dichloro-s-trazinetrione(s)s and/or trichloro-s-triazinetrione(s); and

c. a proton-donor serving as a water-soluble agent capable of lowering the pH of an aqueous solution to less than 3 (note claim 1).

For the size of the composition, i.e., whether the composition is in the form of powder, tablet or agglomerate, such limitation is not seen as a patentable difference because it would have been obvious to one skilled in the art to select the proper form for the composition as long as the composition can still react to form chlorine dioxide when it contacts water.

The difference is EP '550 does not teach a membrane that separates the solid composition and the water solution.

CN '610 is applied as stated above to teach that it is known and convenient way to place the chlorine generating composition in a bag so that the composition can be added to the water in a pre-measured amount by throwing the bag in the water.

Alternatively, CA '238 can be applied as stated below.

CA '238 discloses a process for producing chlorine dioxide by introducing water into a receptacle which contains a chlorite of an alkali metal or an alkaline earth metal and an acid. The chlorite and the acid are wrapped or packed in a water soluble envelope or container so that upon the introduction of water into the receptacle, the water soluble envelopes dissolve, to react and to form chlorine dioxide which is

immediately absorbed by the water to form an aqueous chlorine dioxide or chlorous acid solution (note page 4, first full paragraph).

For claim 60, it would have obvious to one skilled in the art to use any water soluble material, including Kraft paper to form the envelope for the chlorine-generating composition. Without a showing of criticality or unexpected results, the use of Kraft paper is not seen as a patentable difference.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to put the chlorine-generating composition in a bag, either a water-insoluble one as suggested by CN '244 or a water-soluble one as suggested by CA '238 to form bags of pre-measured amount of the chlorine-generating composition and such bags would be conveniently added to the water to form chlorine dioxide.

Since the combined teaching has all the positive requirements as in the claimed device, the "device" of the combined teaching would inherently as "capable" as the claimed device in producing an aqueous solution comprising the same amount of chlorine dioxide.

Claims 1-36, 39-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aston (2,482,891) in view of either CN 1,104,610 or CA 959,238.

Aston '891 discloses a composition in which in contact with water evolves chlorine dioxide. The composition is valuable for use in the bleaching of a variety of organic materials and especially cellulosic materials (note column 1, lines 1-6).

For the instant claim 61, the composition of Aston '891 is a solid mixture in which the active ingredients are a salt of chlorous acid and a solid organic acid anhydride (note claim 1).

The composition of Aston '891 can further contain a desiccant, such as calcium chloride (note Example 2), and it may also contain inert diluent materials, such as sodium chloride, sodium carbonate, etc. (note column 2, lines 39-52). The desiccant or the diluent is considered the same as the non-acid forming additive or the alkali metal or alkaline earth metal acid acids.

For other desiccant or acid beside those exemplified in Aston '891, it would have been obvious to one of ordinary skill in the art to select any known desiccant, such as silica gel, in the art for the composition of Aston '891 as long as it can render the composition of Aston '891 stable or any known acid as long as chlorine dioxide can be produced when the composition of Aston '891 comes in contact with water.

Each of the components of the composition is most preferably present in finely powdered form (note column 1, lines 7-14), however, it would have been obvious to one skilled in the art to produce the composition of Aston '891 in any similar form, such as pellets, granules, etc., as long as chlorine dioxide can be produced when contacting the composition of Aston '891 with water.

The difference is Aston '891 does not disclose a membrane which defines at least an enclosed space containing a mixture of at least one metal chlorite and at least one acid forming component.

CN '610 or CA '238 is applied as stated above.

For the material of the membrane, note the reason stated in the above rejection.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to put the composition of Aston '891 in a water-insoluble bag, as suggested by CN '610, or in a water-soluble bad, as suggested by CA '238 to form bags of pre-measured amount of the chlorine-generating composition and such bags would be conveniently added to the water to form chlorine dioxide.

Applicant's arguments filed January 25, 2006 have been fully considered but they are not persuasive.

For the 112, 2nd paragraph rejection, it should be noted that the "uncoated" limitation was rejected under 112, 1st paragraph in prior rejection. Applicants have tried to remove to remove such limitation in the independent claim, but not in the dependent claims 43, 48.

Applicants argue that EP '550 fails to discuss storing the admixture in any type of container.

EP '550 is not relied upon to teach such feature. CN '610 or CA '238 is applied to teach the desire to putting a chlorine dioxide generating composition in a bag to facilitate the adding of such composition to water.

Applicants argue that EP '550 uses the composition immediately after it is made.

There is no evidence in EP '550 to support Applicants' allegation. EP '550 discloses that the invention relates to solid compositions capable of releasing chlorine

dioxide very quickly on dissolution in water (note page 2, lines 1-2), not using immediately after being made.

Applicants argue that the package of CA '238 contains separate compartments for the alkali/alkaline earth metal chlorite and the acid.

CA '238 contains separate compartments to prevent premature reaction between the two reactants. However, the composition of EP '550 or Aston '981 is disclosed as being stable, therefore, separate compartments would not be required for the composition of EP '550 or Aston '981.

Applicants argue that CN '610 teaches a wax coating.

Again CN '610 is only relied to teach to use of a bag for the convenient of adding pre-measured composition into water to generate chlorine dioxide. Since the composition of EP '550 or Aston '981 is stable, no wax coating would be needed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman can be reached on (571) 272-1358. The fax phone

numbers for the organization where this application or proceeding is assigned are (703) 872-9306 or (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
February 21, 2006